

What we claim is:

1. A label switching router placed at an end of an LSP set by using CRLDP comprising:

a bidirectional LSP setup accepting portion for accepting an external bidirectional LSP setup request,

a bidirectional LSP setup TLV preparing portion for preparing a bidirectional LSP setup TLV included in a bidirectional setup label request message transmitted in an up direction to a label switching router placed at another end of the LSP based on the bidirectional LSP setup request,

a bidirectional LSP setup TLV analyzer for analyzing the bidirectional LSP setup TLV in the message when the message is received from the label switching router at the other end,

a bidirectional LSP processor for performing an LSP setup request in a down direction as opposed to the up direction based on the analyzed result by the bidirectional LSP setup TLV analyzer, and

an explicit route preparing portion for preparing an explicit route on which a router to be relayed in the down direction is prescribed, based on an explicit route preparing request from the bidirectional LSP processor, based on the CRLDP, and for notifying the prepared route to the bidirectional LSP processor.

2. The label switching router as claimed in claim 1 wherein the bidirectional LSP setup TLV preparing portion includes down direction service quality information in the bidirectional LSP setup TLV.

3. The label switching router as claimed in claim 1 wherein the bidirectional LSP setup TLV preparing portion includes down direction explicit route information in the bidirectional LSP setup TLV.

4. The label switching router as claimed in claim 1 wherein the bidirectional LSP setup TLV preparing portion sets bidirectional LSP setup information in the label request message transmitted upon an LSP information change request in the up direction.

5. The label switching router as claimed in claim 1 wherein the bidirectional LSP setup TLV preparing portion sets bidirectional LSP deletion information in a label release message transmitted upon an LSP deletion request in the up direction.

5 6. The label switching router as claimed in claim 1 wherein when the bidirectional LSP setup TLV analyzer finds, as a result of analyzing a label mapping message received in response to the label request message, that bidirectional LSP request accepting information indicating that the bidirectional LSP setup request is accepted at the label switching router  
10 placed at the other end is not set in the label mapping message, the bidirectional LSP processor recognizes that the label switching router at the other end does not have a bidirectional LSP setup function.

7. The label switching router as claimed in claim 1 wherein the bidirectional LSP setup TLV comprises a vendor-private TLV.